

THE ANNALS OF APPLIED BIOLOGY

EDITED BY

R. W. MARSH

AND

I. THOMAS

WITH THE ASSISTANCE OF

F. C. BAWDEN

J. T. MARTIN

M. J. R. HEALY

E. A. PARKIN

D. J. WATSON

VOLUME 49

CAMBRIDGE

AT THE UNIVERSITY PRESS

1961

PUBLISHED BY
THE SYNDICS OF THE CAMBRIDGE UNIVERSITY PRESS

Bentley House, 200 Euston Road, London, N.W. 1
American Branch: 32 East 57th Street, New York 22, N.Y.

*Printed in Great Britain at the University Press, Cambridge
(Brooke Crutchley, University Printer)*

CONTENTS

No. 1 (MARCH 1961)

	PAGE
1. Host finding by aphids in the field. III. Visual attraction. By J. S. KENNEDY, C. O. BOOTH and W. J. S. KERSHAW. (With 10 Text-figures)	1
2. Determination of the resistance of locusts to γ -BHC and diazinon in relation to their age, sex and weight. By R. D. MACCUAIG. (With 3 Text-figures)	22
3. Effect of time and temperature on toxicity of insecticides to insects. I. Tests of DDT on larvae of <i>Aedes aegypti</i> L. By M. DAS and P. H. NEEDHAM. (With 1 Text-figure)	32
4. Effect of time and temperature on toxicity of insecticides to insects. II. Tests of DDT on adult <i>Tenebrio molitor</i> L. below 10° C. By M. DAS. (With 2 Text-figures)	39
5. The relationships between increased oxygen uptake and locomotor ataxy or death in insecticide-poisoned <i>Alphitobius laevigatus</i> F. By K. G. GOSTICK. (With 5 Text-figures)	46
6. Observations on the pollination of red clover by bees. I. The yield of seed in relation to the numbers and kinds of pollinators. By R. P. HAWKINS. (With 2 Text-figures)	55
7. Fluctuations in the aerial density of <i>Anisopus fenestralis</i> Scop. (Diptera) above sewage bacteria beds. By H. A. HAWKES. (With 7 Text-figures)	66
8. Experiments on the value of stupefying and lethal substances in the control of harmful birds. By M. G. RIDPATH, R. J. P. THEARLE, D. McCOWAN and F. J. S. JONES. (With 3 Text-figures)	77
9. Investigations on fungitoxic derivatives of salicylaldehyde. I. The 3-, 5- and 3,5-chlorinated derivatives of salicylanilide and salicyl- <i>para</i> -chloro-anilide. By R. J. SMITH and W. H. READ	102
10. Field trials on the control of club root in Brassicacae. By P. WIGGELL, R. H. HAWKEN, D. WIGGELL, L. J. COCK and J. H. BANT	110
11. <i>Verticillium</i> wilt of tomatoes—the role of pectic and cellulolytic enzymes. By R. K. S. WOOD	120
12. Potato haulm resistance to <i>Phytophthora infestans</i> . I. Field assessment of resistance. By D. H. LAPWOOD. (With 6 Text-figures)	140
13. Saprophytic colonization of wheat straw by <i>Cercospora herpotrichoides</i> Fron and other fungi. By R. C. F. MACER. (With Plate)	152
14. The survival of <i>Cercospora herpotrichoides</i> Fron in wheat straw. By R. C. F. MACER	165

15. Studies on silvering disease of red beet. By W. G. KEYWORTH and J. SHEILA HOWELL. (With Plates 1 and 2 and 1 Text-figure)	173
16. Observations on the biology of chrysanthemum eelworm <i>Aphelenchoides ritzema-bosi</i> (Schwartz) Steiner in florists' chrysanthemum. I. Spread of eelworm infestation. By J. J. HESLING and H. R. WALLACE. (With Plate and 6 Text-figures)	195
17. Observations on the biology of chrysanthemum eelworm <i>Aphelenchoides ritzema-bosi</i> (Schwartz) Steiner in florists' chrysanthemum. II. Symptoms of eelworm infestation. By J. J. HESLING and H. R. WALLACE. (With Plates 1 and 2 and 1 Text-figure)	204
18. Naming of some strains of soft-rot coliform bacteria—a correction. By W. J. DOWSON, D. C. GRAHAM and E. HELLMERS	210
19. Proceedings of the Association of Applied Biologists:	
Aspects of black currant gall mite infestations. By C. A. COLLINGWOOD and A. M. BROCK. (With 2 Text-figures)	211
Metabolism of soil invertebrates in relation to soil fertility. By AMYAN MACFADYEN. (With 2 Text-figures)	215
Reviews	219

NO. 2 (JUNE 1961)

1. Fungicidal activity and chemical constitution. IX. The activity of 6-n-alkyl-8-hydroxyquinolines. By R. J. W. BYRDE, D. R. CLIFFORD and D. WOODCOCK. (With 4 Text-figures)	225
2. Investigations on fungitoxic derivatives of salicylaldehyde. II. Chlorinated and brominated derivatives of salicylideneaniline and related compounds as eradicants of cucumber powdery mildew (<i>Erysiphe cichoracearum</i> DC.). By R. J. SMITH and W. H. READ	233
3. Investigations on fungitoxic derivatives of salicylaldehyde. III. Some N-substituted derivatives of halogenated salicylideneimines as eradicants of cucumber powdery mildew. By R. J. SMITH and W. H. READ	242
4. The fungitoxicity of metal ions. By E. SOMERS. (With 2 Text-figures)	246
5. Concentrate spraying of apple trees. II. Dosage/volume relationships of lime-sulphur in disease control and spray damage. By M. H. MOORE	254
6. Effect of time and temperature on toxicity of insecticides to insects. III. Tests of seven poisons in the range 10–28° C. By M. DAS and A. H. MCINTOSH. (With 11 Text-figures)	267
7. The epidemiology of apple scab (<i>Venturia inaequalis</i> (Cke.) Wint.). I. Frequency of airborne spores in orchards. By J. M. HIRST and O. J. STEDMAN. (With 7 Text-figures)	290

8. The influence of sunshine and rain on tea blister blight, <i>Exobasidium vexans</i> Masee, in Ceylon. By T. VISSER, N. SHANMUGANATHAN and J. V. SABANAYAGAM. (With 6 Text-figures)	306
9. Potato haulm resistance to <i>Phytophthora infestans</i> . II. Lesion production and sporulation. By D. H. LAPWOOD. (With 3 Text-figures)	316
10. Effect of nitrogen supply on the response of Majestic potato to gibberellic acid. By E. C. HUMPHRIES and S. A. W. FRENCH. (With 2 Text-figures)	331
11. Some isolates of virus causing swollen-shoot disease of cacao in Nigeria and their interrelationships. By J. M. THRESH. (With Plate)	340
12. Witchweed (<i>Striga hermonthica</i>) on rain-grown pearl millet in nitrogen-deficient sandy soil of the central Sudan. By S. A. J. TARR	347
13. <i>Heterodera rostochiensis</i> (Woll. 1923) on <i>Solanum demissum</i> —a population study. By J. J. HESLING. (With 3 Text-figures)	350
14. Proceedings of the Association of Applied Biologists:	
Life history and bionomics of the vetch-leaf gall midge. By R. GAIR and C. T. GUILLE	360
The effect of γ -radiation on some wood-boring insects. By J. D. BLETCHLY. (With 2 Text-figures)	362
Studies on the use of radiation in oat breeding. By T. D. JOHNSTON. (With 1 Text-figure)	370
Induced tolerance of stored-product beetles to methyl bromide. By H. A. U. MONRO, A. J. MUSGRAVE and E. UPITIS. (With 3 Text-figures)	373
A study of the development of beetle infestations in flour-milling machinery. By C. E. DYTE	378
The importance of plant-parasitic nematodes in Britain. By H. C. GOUGH	379
Practical problems and recent trends in nematode control. By F. C. PEACOCK	381
Virus isolated from cherry trees with rasp-leaf and leaf-roll diseases. By R. CROPLEY	384
Report of the Council of the Association of Applied Biologists for the year 1960	385
Report of the Honorary Editor for 1960	389
Report of the Honorary Treasurer for the year ending 31 December 1960	389
Balance Sheet	390

No. 3 (OCTOBER 1961)

	PAGE
Address of the President of the Association of Applied Biologists. The future of chemical control of insects. By C. POTTER	391
1. The disfiguration of painted surfaces by fungi, with special reference to <i>Phoma violacea</i> . By D. E. EVELEIGH. (With Plate)	403
2. The growth requirements of <i>Phoma violacea</i> , with reference to its disfiguration of painted surfaces. By D. E. EVELEIGH. (With Plate and 3 Text-figures)	412
3. Some variants and possible errors in the test-tube dilution and slide-germination methods for laboratory testing of fungicides. By A. H. MCINTOSH. (With 2 Text-figures)	424
4. Effects of time and temperature on the fungistatic action of mercury-containing and other compounds on conidia of <i>Botrytis fabae</i> Sardiña. By A. H. MCINTOSH. (With 5 Text-figures)	433
5. Strains of <i>Botrytis allii</i> resistant to chlorinated nitrobenzenes. By D. PRIEST and R. K. S. WOOD. (With 1 Text-figure)	445
6. Infection of bean plants (<i>Vicia faba</i> L.) with <i>Botrytis cinerea</i> and <i>B. fabae</i> . By B. J. DEVERALL and R. K. S. WOOD	461
7. Chocolate spot of beans (<i>Vicia faba</i> L.)—interactions between phenolase of host and pectic enzymes of the pathogen. By B. J. DEVERALL and R. K. S. WOOD	473
8. Fruit-spot ('speckle') of Jamaican bananas caused by <i>Deightoniella torulosa</i> (Syd.) Ellis. IV. Further observations on spore dispersal. By D. S. MEREDITH. (With Plate and 2 Text-figures)	488
9. Germination and penetration studies on coffee rust (<i>Hemileia vastatrix</i> B. & Br.). By R. W. RAYNER. (With 3 Text-figures)	497
10. The effect of gibberellic acid on the incidence of loose smut of wheat. By P. G. MANTLE	506
11. Further observations on the reaction of wheat varieties to physiologic races of loose smut. By P. G. MANTLE	510
12. Observations on the use of predacious fungi for the control of <i>Heterodera</i> spp. By A. F. HAMS and G. D. WILKIN	515
13. Cherry leaf-roll virus. By R. CROPLEY. (With 2 Plates)	524
14. Viruses causing rasp-leaf and similar diseases of sweet cherry. By R. CROPLEY. (With Plate and 1 Text-figure)	530
15. The toxicity of mixtures of zinc and copper sulphates to rainbow trout (<i>Salmo gairdnerii</i> Richardson). By R. LLOYD. (With 2 Text-figures)	535

	PAGE
16. Field observations on the control of blossom beetles (<i>Meligethes aeneus</i> F.) and cabbage-seed weevils (<i>Ceuthorrhynchus assimilis</i> Payk.) on mustard-seed crops in East Anglia. By A. L. WINFIELD. (With Plate and 7 Text-figures)	539
Proceedings of the Association of Applied Biologists:	
The frit fly—a denizen of grassland and a pest of oats. By T. R. E. SOUTHWOOD and W. F. JEPSON	556
Varietal differences in some physiological characters of wheat. By F. G. H. LUPTON	557
Analysis of ecotypic differences in tall fescue (<i>Festuca arundinacea</i> Schreb.). By B. N. CHATTERJEE	560
Reviews	563

No. 4 (DECEMBER 1961)

1. The poison baiting of corn-ricks with particular reference to the control of house-mice. By F. P. ROWE, E. J. TAYLOR and A. H. J. CHUDLEY	571
2. Comparison between malathionspraying and lindane-whitewash mixture for controlling <i>Ephestia elutella</i> (Hübner) in warehouses. By MARGARET T. ARMSTRONG. (With 3 Text-figures)	578
3. The depletion of insecticides on sheep fleece. By I. R. HARRISON and C. A. JOHNSON. (With 7 Text-figures)	588
4. Changes in the free amino acids and amides in tomato plants inoculated with tomato spotted wilt virus. By I. W. SELMAN, M. R. BRIERLEY, G. F. PEGG and T. A. HILL. (With 4 Text-figures)	601
5. The effect of paracrinkle virus on the growth of King Edward potato at different temperatures and daylengths. By B. KASSANIS and W. W. SCHWABE	616
6. Laboratory and field studies on the relation of arabis mosaic virus to its nematode vector <i>Xiphinema diversicaudatum</i> (Micoletzky). By B. D. HARRISON and R. D. WINSLOW. (With Plate and 2 Text-figures)	621
7. The development of filter-passing organisms in <i>Corynebacterium fascians</i> cultures. By MARGARET S. LACEY. (With Plate)	634
8. Dispersion and deposition of airborne <i>Lycopodium</i> and <i>Ganoderma</i> spores. By P. H. GREGORY, T. J. LONGHURST and T. SREERAMULU. (With Plate and 4 Text-figures)	645
9. Experiments on the dispersion of <i>Lycopodium</i> and <i>Podaxis</i> spores in the air. By T. SREERAMULU and A. RAMALINGAM. (With 3 Text-figures)	659

	PAGE
10. Studies on <i>Gloeosporium musarum</i> Cke. & Massee causing storage rots of Jamaican bananas. IV. Large-scale experiments with sodium salicylanilide ('Shirlan WS'). By D. S. MEREDITH	671
11. Wilt of lucerne caused by species of <i>Verticillium</i> . III. Viability of <i>V. albo-atrum</i> carried with lucerne seed; effects of seed dressings and fumigants. By IVOR ISAAC and J. B. HEALE. (With Plate and 2 Text-figures) . . .	675
12. The effect of vernalization on embryos of field-resistant wheat varieties infected by loose smut (<i>Ustilago tritici</i>). By P. G. MANTLE. (With Plate) . .	692
13. Potato haulm resistance to <i>Phytophthora infestans</i> . III. Lesion distribution and leaf destruction. By D. H. LAPWOOD. (With 3 Text-figures) . .	704
14. Black-pod disease of cocoa. I. A comparison of isolates of <i>Phytophthora palmivora</i> (Butl.) Butl. By J. A. SPENCE	717
15. Black-pod disease of cocoa. II. A study of host-parasite relations. By J. A. SPENCE. (With Plate and 2 Text-figures)	723
Reviews	735

INDEX OF AUTHORS

	PAGE
ARMSTRONG, MARGARET T. Comparison between malathion spraying and lindane-whitewash mixture for controlling <i>Ephesia elutella</i> (Hübner) in warehouses	578
BANT, J. H. See WIGGELL, P. et al.	110
BLETCHLY, J. D. The effect of γ -radiation on some wood-boring insects	362
BOOTH, C. O. See KENNEDY, J. S. et al.	I
BRIERLEY, M. R. See SELMAN, I. W. et al.	601
BROCK, A. M. See COLLINGWOOD, C. A.	211
BYRDE, R. J. W., CLIFFORD, D. R. and WOODCOCK, D. Fungicidal activity and chemical constitution. IX. The activity of 6-n-alkyl-8-hydroxyquinolines	225
CHATTERJEE, B. N. Analysis of ectotypic differences in tall fescue (<i>Festuca arundinacea</i> Schreb.)	560
CHUDLEY, A. H. J. See ROWE, F. P. et al.	571
CLIFFORD, D. R. See BYRDE, R. J. W. et al.	225
COCK, L. J. See WIGGELL, P. et al.	110
COLLINGWOOD, C. A. and BROCK, A. M. Aspects of black currant gall mite infestations	211
CROPLEY, R. Viruses isolated from cherry trees with rasp-leaf and leaf-roll diseases	384
CROPLEY, R. Cherry leaf-roll virus. (With 2 plates)	524
CROPLEY, R. Viruses causing rasp-leaf and similar diseases of sweet cherry. (With plate)	530
DAS, M. Effect of time and temperature on toxicity of insecticides to insects. II. Tests of DDT on adult <i>Tenebrio molitor</i> L. below 10° C.	39
DAS, M. and MCINTOSH, A. H. Effect of time and temperature on toxicity of insecticides to insects. III. Tests of seven poisons in the range 10–28° C.	267
DAS, M. and NEEDHAM, P. H. Effect of time and temperature on toxicity of insecticides to insects. I. Tests of DDT on larvae of <i>Aedes aegypti</i> L.	32
DEVERALL, B. J. and WOOD, R. K. S. Infection of bean plants (<i>Vicia faba</i> L.) with <i>Botrytis cinerea</i> and <i>B. fabae</i>	461
DEVERALL, B. J. and WOOD, R. K. S. Chocolate spot of beans (<i>Vicia faba</i> L.)—interactions between phenolase of host and pectic enzymes of the pathogen	473
DOWSON, W. J., GRAHAM, D. C. and HELLMERS, E. Naming of some strains of soft-rot coliform bacteria—a correction	210
DYTE, C. E. A study of the development of beetle infestations in flour-milling machinery	378
EVELEIGH, D. E. The disfiguration of painted surfaces by fungi, with special reference to <i>Phoma violacea</i> . (With plate)	403
EVELEIGH, D. E. The growth requirements of <i>Phoma violacea</i> , with reference to its disfiguration of painted surfaces. (With plate)	412
FRENCH, S. A. W. See HUMPHRIES, E. C.	331
GAIR, R. and GUILLE, C. T. Life history and bionomics of the vetch-leaf gall midge	360
GOSTICK, K. G. The relationships between increased oxygen uptake and locomotor ataxy or death in insecticide-poisoned <i>Alphitobius laevigatus</i> F.	46
GOUGH, H. C. The importance of plant-parasitic nematodes in Britain	379
GRAHAM, D. C. See DOWSON, W. J. et al.	210
GREGORY, P. H., LONGHURST, T. J. and SREERAMULU, T. Dispersion and deposition of airborne <i>Lycopodium</i> and <i>Ganoderma</i> spores. (With plate)	645
GUILLE, C. T. See GAIR, R.	360

	PAGE
HAMS, A. F. and WILKIN, G. D. Observations on the use of predacious fungi for the control of <i>Heterodera</i> spp.	515
HARRISON, B. D. and WINSLOW, R. D. Laboratory and field studies on the relation of arabis mosaic virus to its nematode vector <i>Xiphinema diversicaudatum</i> (Micoletzky). (With plate)	621
HARRISON, I. R. and JOHNSON, C. A. The depletion of insecticides on sheep fleece	588
HAWKEN, R. H. See WIGGELL, P. <i>et al.</i>	110
HAWKES, H. A. Fluctuations in the aerial density of <i>Anisopus fenestralis</i> Scop. (Diptera) above sewage bacteria beds	66
HAWKINS, R. P. Observations on the pollination of red clover by bees. I. The yield of seed in relation to the numbers and kinds of pollinators	55
HEALE, J. B. See ISAAC, I.	675
HELLMERS, E. See DOWSON, W. J.	210
HESLING, J. J. <i>Heterodera rostochiensis</i> (Woll. 1923) on <i>Solanum demissum</i> —a population study	350
HESLING, J. J. and WALLACE, H. R. Observations on the biology of chrysanthemum eelworm (<i>Aphelenchoides ritzema-bosi</i> (Schwartz) Steiner) in florists' chrysanthemums:	
I. Spread of eelworm infestation. (With plate)	195
II. Symptoms of eelworm infestation. (With 2 plates)	204
HILL, T. A. See SELMAN, I. W. <i>et al.</i>	601
HIRST, J. M. and STEDMAN, O. J. The epidemiology of apple scab (<i>Venturia inaequalis</i> (Cke.) Wint.). I. Frequency of airborne spores in orchards	290
HOWELL, J. SHEILA. See KEYWORTH, W. G.	173
HUMPHRIES, E. C. and FRENCH, S. A. W. Effect of nitrogen supply on the response of Majestic potato to gibberellic acid	331
ISAAC, I. and HEALE, J. B. Wilt of lucerne caused by species of <i>Verticillium</i> . III. Viability of <i>V. albo-atrum</i> carried with lucerne seed; effects of seed dressings and fumigants. (With plate)	675
JEPSON, W. F. See SOUTHWOOD, T. R. E.	556
JOHNSON, C. A. See HARRISON, I. R.	588
JOHNSTON, T. D. Studies on the use of radiation in oat breeding	370
JONES, F. J. S. See RIDPATH, M. G. <i>et al.</i>	77
KASSANIS, B. and SCHWABE, W. W. The effect of paracrinkle virus on the growth of King Edward potato at different temperatures and daylengths	616
KENNEDY, J. S., BOOTH, C. O. and KERSHAW, W. J. S. Host finding by aphids in the field. III. Visual attraction	I
KERSHAW, W. J. S. See KENNEDY, J. S. <i>et al.</i>	I
KEYWORTH, W. G. and HOWELL, J. SHEILA. Studies on silvering disease of red beet. (With 2 plates)	173
LACEY, MARGARET S. The development of filter-passing organisms in <i>Corynebacterium fascians</i> cultures. (With plate)	634
LAPWOOD, D. H. Potato haulm resistance to <i>Phytophthora infestans</i> :	
I. Field assessment of resistance	140
II. Lesion production and sporulation	316
III. Lesion distribution and leaf destruction	704
LLOYD, R. The toxicity of mixtures of zinc and copper sulphates to rainbow trout (<i>Salmo gairdnerii</i> Richardson)	535
LONGHURST, T. J. See GREGORY, P. H. <i>et al.</i>	645
LUPTON, F. G. H. Varietal differences in some physiological characters of wheat	557

	PAGE
MCCOWAN, D. <i>See</i> RIDPATH, M. G. <i>et al.</i>	77
MACCUAIG, R. D. Determination of the resistance of locusts to γ -BHC and diazinon in relation to their age, sex and weight	22
MACFADYEN, A. Metabolism of soil invertebrates in relation to soil fertility	215
MCINTOSH, A. H. Some variants and possible errors in the test-tube dilution and slide-germination methods for laboratory testing of fungicides	424
MCINTOSH, A. H. Effects of time and temperature on the fungistatic action of mercury-containing and other compounds on conidia of <i>Botrytis fabae</i> Sardinia	433
MCINTOSH, A. H. <i>See</i> DAS, M.	267
MACER, R. C. F. Saprophytic colonization of wheat straw by <i>Cercospora herpotrichoides</i> Fron and other fungi. (With plate)	152
MACER, R. C. F. The survival of <i>Cercospora herpotrichoides</i> Fron in wheat straw	165
MANTLE, P. G. The effect of gibberellic acid on the incidence of loose smut of wheat	506
MANTLE, P. G. Further observations on the reaction of wheat varieties to physiologic races of loose smut	510
MANTLE, P. G. The effect of vernalization on embryos of field-resistant wheat varieties infected by loose smut (<i>Ustilago tritici</i>). (With plate)	692
MEREDITH, D. S. Fruit-spot ('speckle') of Jamaican bananas caused by <i>Deightoniella torulosa</i> (Syd.) Ellis. (With plate)	488
MEREDITH, D. S. Studies on <i>Gloeosporium musarum</i> Cke. & Massee causing storage rots of Jamaican bananas. IV. Large-scale experiments with sodium salicylanilide ('Shirlan WS')	671
MONRO, H. A. U., MUSGRAVE, A. J. and UPITIS, E. Induced tolerance of stored-product beetles to methyl bromide	373
MOORE, M. H. Concentrate spraying of apple trees. II. Dosage/volume relationships of lime-sulphur in disease control and spray damage	254
MUSGRAVE, A. J. <i>See</i> MONRO, H. A. U. <i>et al.</i>	373
NEEDHAM, P. H. <i>See</i> DAS, M.	32
PEACOCK, F. C. Practical problems and recent trends in nematode control	381
PEGG, G. F. <i>See</i> SELMAN, I. W. <i>et al.</i>	601
POTTER, C. The future of chemical control of insects. (Presidential Address.) (With portrait)	391
PRIEST, D. and WOOD, R. K. S. Strains of <i>Botrytis allii</i> resistant to chlorinated nitrobenzenes	445
RAMALINGAM, A. <i>See</i> SREERAMULU, T.	659
RAYNER, R. W. Germination and penetration studies on coffee rust (<i>Hemileia vastatrix</i> B. & Br.)	497
READ, W. H. <i>See</i> SMITH, R. J.	102, 233, 242
RIDPATH, M. G., THEARLE, R. J. P., MCCOWAN, D. and JONES, F. J. S. Experiments on the value of stupefying and lethal substances in the control of harmful birds	77
ROWE, F. P., TAYLOR, E. J. and CHUDLEY, A. H. J. The poison baiting of corn-ricks with particular reference to the control of house-mice	571
SABANAYAGAM, J. V. <i>See</i> VISSER, T. <i>et al.</i>	306
SCHWABE, W. W. <i>See</i> KASSANIS, B.	616
SELMAN, I. W., BRIERLEY, M. R., PEGG, G. F. and HILL, T. A. Changes in the free amino acids and amides in tomato plants inoculated with tomato spotted wilt virus	601
SHANUGANATHAN, N. <i>See</i> VISSER, T. <i>et al.</i>	306

	PAGE
SMITH, R. J. and READ, W. H. Investigations on fungitoxic derivatives of salicylaldehyde:	
I. The 3-, 5- and 3,5-chlorinated derivatives of salicylanilide and salicyl- <i>para</i> -chloroanilide	102
II. Chlorinated and brominated derivatives of salicyldeaniline and related compounds as eradicants of cucumber powdery mildew (<i>Erysiphe cichoracearum</i> DC)	233
III. Some N-substituted derivatives of halogenated salicylideneimines as eradicants of cucumber powdery mildew	242
SOMERS, E. The fungitoxicity of metal ions	246
SOUTHWOOD, T. R. E. and JEFSON, W. F. The frit fly—a denizen of grassland and a pest of oats	556
SPENCE, J. A. Black-pod disease of cocoa:	
I. A comparison of isolates of <i>Phytophthora palmivora</i> (Butl.) Butl.	717
II. A study of host-parasite relations. (With plate)	723
SREERAMULU, T. and RAMALINGAM, A. Experiments on the dispersion of <i>Lycopodium</i> and <i>Podaxis</i> spores in the air	659
SREERAMULU, T. See GREGORY, P. H. <i>et al.</i>	645
STEDMAN, O. J. See HIRST, J. M.	290
TARR, S. A. J. Witchweed (<i>Striga hermonthica</i>) on rain-grown pearl millet in nitrogen-deficient sandy soil of the central Sudan	347
TAYLOR, E. J. See ROWE, F. P. <i>et al.</i>	571
THEARLE, R. J. P. See RIDPATH, M. G. <i>et al.</i>	77
THRESH, J. M. Some isolates of virus causing swollen-shoot disease of cacao in Nigeria and their interrelationships. (With plate)	340
UPITIS, E. See MONRO, H. A. U. <i>et al.</i>	373
VISSER, T., SHANMUGANATHAN, N. and SABANAYAGAM, J. V. The influence of sunshine and rain on tea blister blight, <i>Exobasidium vexans</i> Massee, in Ceylon	306
WALLACE, H. R. See HESLING, J. J.	195, 204
WIGGELL, D. See WIGGELL, P. <i>et al.</i>	110
WIGGELL, P., HAWKEN, R. H., WIGGELL, D., COCK, L. J. and BANT, J. H. Field trials on the control of club root in Brassicæ	110
WILKIN, G. D. See HAMS, A. F.	515
WINFIELD, A. L. Field observations on the control of blossom beetles (<i>Meligethes aeneus</i> F.) and cabbage-seed weevils (<i>Ceuthorrhynchus assimilis</i> Payk.) on mustard-seed crops in East Anglia. (With plate)	539
WINSLOW, R. D. See HARRISON, B. D.	621
WOOD, R. K. S. <i>Verticillium</i> wilt of tomatoes—the role of pectic and cellulolytic enzymes	120
WOOD, R. K. S. See PRIEST, D.	445
WOOD, R. K. S. See DEVERALL, B. J.	461, 473
WOODCOCK, D. See BYRDE, R. J. W. <i>et al.</i>	225